

AMENDMENTS TO THE CLAIMS

Claims 1- 22 (canceled).

23. (Previously presented) A process for the enzymatic synthesis of incompletely acrylated polyol, which ~~comprises~~ consists essentially of reacting an aliphatic polyol with an acrylic acid compound or an alkyl ester thereof in bulk or in a liquid reaction medium comprising an organic solvent, in the presence of an enzyme which is selected from hydrolases and transfers acrylate groups, and after the end of the reaction optionally isolating the polyol acrylate(s) formed from the reaction mixture and wherein the polyol is a straight-chain or branched or carbocyclic, saturated or unsaturated hydrocarbon compounds having at least 3 carbon atoms and at least 3 (esterifiable) hydroxyl groups in optically pure form or as a stereoisomer mixture, or mixtures of different polyols and wherein the hydrolase is lipases (E.C. 3.1.1.3), glycosylases (E.C. 3.2.-.-), or proteases (E.C. 3.4.-.-) in free or immobilized form.

24. (Previously Presented) A process as claimed in claim 23, wherein the liquid reaction medium has an initial water content of less than about 10% by volume.

25. (Previously presented) A process as claimed in claim 23, wherein acrylic acid compound and polyol are used in a molar ratio of about 100:1 to 1:1.

26. (Previously presented) A process as claimed in claim 23, wherein the acrylic acid compound is acrylic acid, C₁-C₆-alkyl-substituted acrylic acid, or the alkyl esters of these compounds, or mixtures thereof.

27. (Cancelled)

28. (Currently Amended) A process as claimed in ~~claim 27~~ claim 23, wherein the polyol is a straight-chain, branched or cyclic saturated hydrocarbons having 3 to 30 carbon atoms and from 3 to 10 hydroxyl groups.

29. (Previously Presented) A process as claimed in claim 23, wherein a completely acrylated polyol acrylate is added to the reaction medium, the polyol acrylate being the ester of an acrylic acid compound and a polyol as defined in claim 23.

30. (Previously Presented) A process as claimed in claim 23, wherein the polyol is glycerol, diglycerol, triglycerol, 1,2,4-butanetriol, trimethylolmethane, trimethylolethane, trimethylolpropane, trimethylolbutane, 2,2,4-trimethyl-1,3-pentanediol, pentaerythritol, ditrimethylolpropane, dipentaerythritol, tripentaerythritol, D-, L-, and mesoerythritol, D- and L-arabitol, adonitol, xylitol, sorbitol, mannitol, dulcitol or inositols, or the mixtures or alkoxylates thereof.

31.-32 (Cancelled).

33. (Previously Presented) A process as claimed in claim 23, wherein the organic solvent is C₁-C₆ alkanols, pyridine, polyalkylene glycol dialkyl ethers, alkylene carbonate, C₁-C₆ alkyl alkanecarboxylic esters, acetone, 1,4-dioxane, 1,3-dioxolane, THF, dimethoxymethane, dimethoxyethane, or mixtures thereof.

34. (Previously Presented) A process as claimed in claim 23, wherein the enzyme content of the reaction medium is in the range from about 0.01 to 10% by weight, based on the polyol used.

35. (Previously Presented) A process as claimed in claim 23, wherein the reaction temperature is in the range from 0 to about 100°C.

36. (Previously Presented) A process as claimed in claim 23, wherein the reaction medium is single-phase or multiphase and wherein the reactants are present in solution, suspension or emulsion.

37. (Previously presented) A process as claimed in claim 23, wherein alcohol produced during the transesterification or water of reaction produced during the esterification is removed from the reaction solution.

38. (Withdrawn) A process for preparing polymeric polyol acrylates, wherein at least one incompletely acrylated polyol is prepared by the process as claimed in claim 23, separating from the reaction mixture, and polymerizing together with further comonomers.

39. (Previously Presented) A process as claimed in claim 37, wherein a reaction product comprising substantially polyol monoacrylates is reacted with at least one comonomer to form a linear copolymer.

40. (Withdrawn) A polymeric polyol acrylate obtained by the process as claimed in claim 38.

41. (Previously presented) A reaction product comprising polyol acrylate, obtained by the process as claimed in claim 23.

42. (Previously Presented) A reaction as claimed in claim 41 containing from about 60 to 100 mol%, based on the total molar number of polyol acrylate, of compounds having both alcohol functionalization and acrylate functionalization.

43-45 (cancelled)

46. (Previously presented) A process as claimed in claim 24, wherein acrylic acid compound and polyol are used in a molar ratio of about 100:1 to 1:1.

47. (Withdrawn) The process as claimed in claim 23, which further comprises thermal or UV curing and wherein the polyol after curing contains extractables which are present in an amount that are less than 5% by weight.

48. (Previously presented) A process for the enzymatic synthesis of a partially acrylated polyol, which comprises reacting an aliphatic polyol with an acrylic acid compound or an alkyl ester thereof in bulk or in a liquid reaction medium comprising an organic solvent, in the presence of an enzyme which is selected from hydrolases and transfers acrylate groups, and after the end of the reaction optionally isolating the polyol acrylate(s) formed from the reaction mixture.